

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 3-5 have been rejected as disclosing subject matter obvious in light of Song et al (US5770888) in view of Fan et al (US6400004). Song discloses a plurality of leads with exposure at lower and upper surfaces. As taught by Song, the leads have edges that run along the top and bottom of the case to enable contacts along the top and bottom surfaces and enhanced heat transfer. Fan teaches an improvement of the leadless semiconductor package by providing an indentation in the leads that allows for the casing material to completely enclose a portion of the case over the leads. In particular, Fan discloses:

“...a leadless semiconductor package characterized in that the lower surface of each lead has an indentation formed corresponding to one of the bottom edges of the package and the indentation is embedded in the package body such that metal burs created at the lead cutting edges will not appear at the bottom of the package...” (Column 2, Lines 28 - 33)

Fan discloses indentations to the leads that allows the casing material to provide only a hole in the bottom for the lead terminal to be exposed. The terminals can be viewed in Fan, Figure 10, to show how just a portion of the leads are exposed on only a single surface of the case. This arrangement limits the exposure of the leads for interconnectivity and for heat displacement.

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To read the limitations Fan into Song would defeat the advantage of the Song invention to “improve the emission of heat generated by a semiconductor package in a package.” (Column 1, Lines 53 - 55). An advantage of the Song invention is the exposure of the lead edges on the exterior of the package. Song discloses “a lower surface of the first connection leads and an upper surface of the second connection leads are exposed” (Column 2, Line 30 and Line 49). The teachings in Song clearly disallow any notch or indentation in the leads that would impair the stacking ability or the heat emission properties of the integrated chip package.

There is no reason, teaching or suggestion to combine the teachings of Fan into Song to provide for the longitudinal notches in the present invention. The teaching of indentations to the leads as in Fan that causes the casing to inhibit exposure of those leads is contrary to Song and destroys one of the principal objects of the Song invention.

Furthermore, the longitudinal notches described in the present invention are distinct from the indentations taught in Fan. As shown in Figures 3 and 5 of the present invention, the longitudinal notches do not extend so far as to reach one another and remain distinct notches. In contrast, the indentation to the lead in Fan is a single indentation that runs the length of the terminal to completely enclose the lead exposure.

The teachings in Fan should not be read into Song as they run contrary to the invention. In light of the differences and new teachings of a longitudinal notch for a leadless semiconductor device package in the present invention, the present invention is not obvious.

Claim 3 is amended to more particularly point out and distinctly claim the invention and

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is therefore allowable. Withdrawal of the rejection of Claim 3 is respectfully requested and the withdrawal of rejections to Claims 4-5, dependent from independent Claim 3, are also requested.

Claim 8 has been rejected as being wholly anticipated by Song et al (US5770888). Song discloses a chip package with exposed leads on both the top and bottom of the package. In order to do so, Song teaches an arrangement of the leads in an S-pattern having a bump from the chip passing down into a flat lead, the lead then extends up and out (S-pattern) towards the side of the package. In this manner, the package as taught by Song, discloses contacts at the bottom, top and side wherein a single lead has at least two operative bends to form an S-pattern.

Petitioner amends the claims to particularly point out the shape and orientation of the L-shaped leads. Claim 8 of the present invention relates to Figures 7 and Figure 9 wherein the leads are connected to the chip and bump along the edge of the leads, as opposed to the termination of the leads. In addition, the exposed edges of the lead form the function of interconnectivity with external devices.

The present invention as claimed is distinct from Song in part by the shape of the leads. Furthermore, the present invention differs from U.S. Patent 5,302,849 to Cavasin in the orientation of the leads. Cavasin limits the exposure of the leads to the termination of the leads. The present invention seeks to utilize the edges of the L-shaped leads to perform the function of the terminals as used in the prior art.

Claim 8 is amended to more particularly point out and distinctly claim the invention.

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Withdrawal of rejection of Claim 8 is respectfully requested. Claim 8 being allowable, Claims 9-10, dependent therefrom are allowable.

The applicants and their attorney thank the Examiner for the detailed comments provided with respect to each pending claim.

In view of the amendments to the claims to more particularly point out and distinctly claim the invention, the review of the teachings contained in each of the two applied patents and the lack of correlation between such teachings and the invention as presently claimed, it is believed that the application is in condition for allowance, which allowance is respectfully requested.

Respectfully submitted,

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